

WHAT IS CLAIMED IS:

1. An image pickup apparatus which records a digital image signal by taking a picture of an object and which transfers the recorded digital image signal
5 to an external device, said apparatus comprising:

a buffer memory for temporarily accumulating the digital image signal obtained by picture taking;

an image saving memory for saving the digital image signal;

10 digital image signal record state judgment means for judging whether the digital image signal obtained by picture taking has been recorded in said image saving memory;

image memory accumulation state judgment means for
15 judging whether a new digital image signal can be accumulated in said buffer memory; and

transfer means for transferring to the external device the digital image signal accumulated in said buffer memory and corresponding to the digital image
20 signal recorded in said image saving memory if said digital image signal record state judgment means determines that the digital image signal obtained by picture taking has been recorded in said image saving memory, and if said image memory accumulation state
25 judgment means determines that any new digital image signal cannot be accumulated in said buffer memory.

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2. An apparatus according to Claim 1, wherein
said buffer memory is controlled so that the
accumulated digital image signal is erased or can be
overwritten after transfer of the digital image signal
5 by said transfer means.

3. An apparatus according to Claim 2, further
comprising a memory management unit for recognizing the
usable remaining capacity of said image saving memory,
10 wherein if said memory management unit recognizes
that the remaining capacity has become smaller than a
predetermined storage capacity, switching is performed
from a mode in which the digital image signal
transferred by said transfer means is erased from said
15 buffer memory or overwriting of the signal is enabled
to a mode in which the digital image signal transferred
by said transfer means is erased from both said buffer
memory and said image saving memory or overwriting of
the signal is enabled in both said buffer memory and
20 said image saving memory.

4. A method of controlling an image pickup
apparatus which records a digital image signal by
taking a picture of an object and which transfers the
25 recorded digital image signal to an external device,
said method comprising:

an accumulation step of temporarily accumulating

in a buffer memory the digital image signal obtained by picture taking;

a recording step of finally saving the digital image signal to a memory;

5 a record state judgment step of judging whether the digital image signal obtained by picture taking has been recorded in said recording step;

10 an accumulation state judgment step of judging whether a new digital image signal can be accumulated in said accumulation step; and

15 a transfer step of transferring to the external device the digital image signal accumulated in said buffer memory in said accumulation step and corresponding to the digital image signal recorded in said recording step if it is determined in said record state judgment step that the digital image signal obtained by picture taking has been recorded in said recording step, and if it is determined in said accumulation state judgment step that any new digital
20 image signal cannot be accumulated in said buffer memory.

5. A method according to Claim 4, wherein the memory to which the digital image signal is saved in
25 said recording step comprises an image saving memory.

6. A method according to Claim 4, wherein said

buffer memory is controlled so that the accumulated digital image signal is erased or can be overwritten after transfer of the digital image signal in said transfer step.

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7. A method according to Claim 6, further comprising a memory management step of recognizing the usable remaining capacity of said image saving memory,

wherein if it is recognized in said memory management step that the remaining capacity has become smaller than a predetermined storage capacity, switching is performed from a mode in which the digital image signal transferred in said transfer step is erased from said buffer memory or overwriting of the signal is enabled to a mode in which the digital image signal transferred in said transfer step is erased from both said buffer memory and said image saving memory or overwriting of the signal is enabled in both said buffer memory and said image saving memory.

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8. An image pickup apparatus which records a digital image signal by taking a picture of an object and which transfers the recorded digital image signal to an external device, said apparatus comprising:

image memory means for temporarily storing the digital image signal obtained by picture taking;

detachable recording means for saving the digital

image signal;

photography preparation state judgment means for judging whether said image pickup apparatus is in a photography preparation state;

5 photography running state judgment means for judging whether said image pickup apparatus is in a photography execution state;

10 digital image signal record state judgment means for judging whether the digital image signal obtained by picture taking has been recorded by said recording means;

image memory accumulation state judgment means for judging whether a new digital image signal can be accumulated in said image memory means; and

15 image transfer propriety judgment means for judging whether the digital image signal accumulated in said image memory means will be transferred to the external device on the basis of output information from said photography preparation state judgment means, said
20 photography running state judgment means, said digital image signal record state judgment means, and said image memory accumulation state judgment means,

wherein said image transfer propriety judgment means determines that the digital image signal
25 accumulated in said image memory means and corresponding to the digital image signal recorded by said recording means will be transferred to the

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external device if said photography preparation state judgment means determines that said image pickup apparatus is in the photography preparation state or said photography running state judgment means

5 determines that said image pickup apparatus is in the photography execution state, if said digital image signal record state judgment means determines that the digital image signal obtained by picture taking has been recorded by said recording means, and if said
10 image memory accumulation state judgment means determines that any new digital image signal cannot be accumulated in said image memory means.

9. An apparatus according to Claim 8, wherein
15 said image transfer propriety judgment means determines that the digital image signal accumulated in said image memory means will not be transferred to the external device if said photography preparation state judgment means determines that said image pickup apparatus is in
20 the photography preparation state or said photography running state judgment means determines that said image pickup apparatus is in the photography execution state, and if said image memory accumulation state judgment means determines that a new digital image signal can be
25 accumulated in said image memory means.

10. An apparatus according to Claim 8, wherein

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said image transfer propriety judgment means determines
that a digital image signal accumulated in said image
memory means and corresponding to a digital image
signal judged by said digital image signal record state
5 judgment means, which has not been recorded by said
recording means will not be transferred to the external
device.

11. An apparatus according to Claim 8, wherein
10 said image transfer propriety judgment means determines
that a digital image signal accumulated in said image
memory means and corresponding to a digital image
signal judged by said digital image signal record state
judgment means, which has been recorded by said
15 recording means will be transferred to the external
device.

12. An apparatus according to Claim 8, wherein
said image transfer propriety judgment means determines
20 that none of digital image signals accumulated in said
image memory means will be transferred to the external
device if said digital image signal record state
judgment means determines that some of the digital
image signals accumulated in said image memory means
25 have not been recorded by said recording means.

13. An apparatus according to Claim 8, further

comprising a release switch having at least two contacts, wherein said photography preparation state judgment means determines that said image pickup apparatus is in the photography preparation state when
5 the first contact of said release switch is selected.

14. An apparatus according to Claim 8, further comprising a finder and detection means for detecting a state of a user viewing a scene through the finder,
10 wherein said photography preparation state judgment means determines that said image pickup apparatus is in the photography preparation state on the basis of information from said detection means that a user is viewing a scene through the finder.

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15. An apparatus according to Claim 8, further comprising a state notice signal transmitting means for transmitting a transfer possible state notice signal to the external device if said image transfer propriety
20 judgment means determines that the digital image signal accumulated in said image memory means can be transferred to the external device, and for transmitting a transfer impossible state notice signal to the external device if said image transfer propriety
25 judgment means determines that the digital image signal accumulated in said image memory means cannot be transferred to the external device.

16. An apparatus according to Claim 15, further comprising communication means for performing communication with the external device in accordance with the USB specifications, wherein said state notice
5 signal transmitting means transmits the transfer possible state notice signal or the transfer impossible state notice signal to the external device by using an interrupt transfer function of said communication means in accordance with the USB specifications.

10 17. An external device connected to an image pickup apparatus which records a digital image signal by taking a picture of an object and which transfers the recorded digital image signal, said external device
15 comprising:

state notice signal receiving means for receiving a transfer possible state notice signal transmitted to said external device when it is determined that a digital image signal accumulated in image memory means
20 provided in said image pickup apparatus can be transferred to said external device, and for receiving a transfer impossible state notice signal transmitted to said external device when it is determined that a digital image signal accumulated in image memory means
25 provided in said image pickup apparatus cannot be transferred to said external device; and

transfer request signal transmitting means for

transmitting a transfer request signal to said image pickup apparatus to request said image pickup apparatus to transfer the digital image signal accumulated in said image memory means,

- 5 wherein said transfer request signal transmitting means transmits the transfer request signal to said image pickup apparatus when said state notice signal receiving means receives the transfer possible state notice signal, and said transfer request signal
- 10 transmitting means does not transmit the transfer request signal to said image pickup apparatus when said state notice signal receiving means receives the transfer impossible state notice signal.

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